Investigation of the corporate governance index moderating impact on the negative correlation between surplus free cash flow and earning prediction

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ABSTRACT

Agency problems have made it difficult to find a way to ensure the quality of financial reporting to have accurate earning forecast. This issue has been taken into special consideration after recent financial scandals, and regulatory authorities in various countries of the world have taken various measures to deal with that. Corporate governance reform is one of the measures that is taken into account in this regard. By reducing the agency problems, the corporate governance mechanisms can reduce the earning opportunities and thereby increase the quality of earnings. On the other hand, increased sophistication of economic activities and variety of decisions have made it possible for managers to manipulate balance sheet items to superficially improve their performance and receive rewards. Surplus free cash flow is one of the factors that can influence the opportunistic behaviors of managers. The present study investigates the effect of surplus free cash flow and corporate governance indices on the earning predictability in companies listed in Tehran Stock Exchange. To this end, a total of 126 companies listed in Tehran stock exchange were investigated within a period of time ranging from 1389 to 1393. The results of this study showed that corporate governance has a positive impact on earnings predictability, and corporate governance has a significant positive impact on the relationship between surplus free cash flow and earning predictability, but the surplus free cash flow has a negative effect on the earnings predictability.

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the existence of transparent and comparable financial data is a prerequisite for accountability and economic decision-makings. Capital holders, creditors and other users need relevant and understandable financial information to decide on purchase, sale, stockholding, loans, appraisal of managers' performance, as well as other important economic factors (Gholamalipour, 2004).

On the other hand, increased sophistication of economic activities and variety of decisions have made it possible for managers to manipulate balance sheet items to superficially improve their performance and receive rewards. According to Jensen (1986) Surplus free cash flow is one of the factors that can influence the opportunistic behaviors of managers. Surplus Free cash flow represents the remaining cash after payment of necessary Asset maintenance or development costs that can be distributed among investors. The term Free doesn't necessarily mean that the company will definitely distribute the remaining cash among investors, but the free cash shall be spent according to policies of the company and as the the board of directors may deem fit (Peykani, 1391). The concept of positive free cash flow indicates the surplus cash that the entities have access to after investments and payment of costs.

In the theory of free cash flow agency, companies with high free cash flow and low opportunity growth are more likely to be devalued. A review of the previous studies shows that companies with a high free cash flow agency cost usually have low quality earnings. Hence, the use of governance tools will reduce the conflicts over the resources under the control of the company managers and thus increase value of the company. In this chapter, first, the theory of agency and agency problems will be discussed. And then the concept of surplus free cash flow and corporate governance and their relationship with earning forecast will be taken into considerations. Finally, the domestic and foreign literature relevant to the present study will be reviewed.

According to the research objectives, the researcher should determine the appropriate method for testing the research hypotheses, because they knows well that research findings largely depend on the type of exploration, and, on the other hand, better understanding of the results of the research by users of a scientific report, calls for explanation of the research structure and methodology.

Review of literature:

The investors' lack of confidence in the accuracy of accounting figures that mainly arises from the financial scandals of some corporates around the world, has led the researchers to pay more attention to the quality of earnings. Earning forecast, (the extent to which investors can predict future earnings or surplus cash flow based on the current earning information) is one of the proxies of the earning quality. The earning data are of high quality when investors are able to analyze the current performance of a particular corporate and estimate its future prospects much better.

The quality of earnings figures would only be high when stock markets rely more heavily on cash flow information when they value a corporate. In the same vein, Brook et al. (2000) show that the high stock of joint venture fund can affect directors' decision for distribution of cash among shareholders as dividends and prevents unfavorable investments that result in lower returns. Moreover, the potential of more free cash flow investments by directors is moderated by active institutional investors (Richardson, 2006).

As for Auditing, Gul and Tsui (2001), show that higher director equity ownership moderates the positive correlation between free cash flow and auditing. Wo (2004) points out that in companies with high free Cash flow agency costs, there is more conflict between stakeholders and directors over surplus cash flow, therefore, in these corporates, director equity ownership plays a significant role in reduction of costs. Paulaina and Renbug (2005) showed that high employee equity ownership employees Decrease the company's dependence on the domestic cash generated to finance the non-earning investments of the corporate. Moreover, managers with high director equity ownership are more likely to distribute surplus cash flow through equity redemption rather than wasting them on non-productive activities (Oswald and Jung, 2008). Therefore, the governance mechanisms are expected to affect the negative effect of surplus free cash flow on the earning forecast, because the surplus cash flow agency problem is moderated by corporate governance mechanisms.

In a study entitled "the impact of corporate governance and ownership structure reform on the quality of earnings in China" Jay et al (2015) investigated the impact of corporate governance and ownership structure on the quality of earnings in China before and after reforms. This study finds that the promulgation of the CCG in 2002 has had a positive impact, but the SSR reform in 2005 has had little effect on listed firms' earnings quality in China. In a study entitled "The Effect of Surplus Cash Flow, Corporate Governance, and Company Size on earning Predictability" Ahmad and Ismail (2013), examined the effect of surplus free cash flow (SFCF) on earning forecast, the role of corporate governance mechanisms on moderation of Surplus cash flows impact on earnings forecasts, and their findings showed that corporates with high surplus free cash flow experience lower earnings forecasts, they also found that incorporates with higher institutional shareholder equity ownership, and independent bosses, earning forecast is more probable in case of high surplus free cash flows. In addition they showed that institutional and managerial ownership play a more prominent role in reducing the surplus free cash

flow agency problems and improving earnings forecasts in corporates.

In a study entitled "the relationship between corporate governance and corporate tax earning "Babajani et al. (2010) investigated the effect of uncertainty in cash flows and the ratio of retained earnings to shareholders' equity (as the corporate maturity index) on the dividend policy of corporates Their results showed that the uncertainty of corporate free cash flows as well as the level of institutional ownership affect dividend of corporates, while the ratio of retained earnings to stakeholders' equity as well as investment opportunities and growth of the corporate have no significant effect on the dividend of corporates.

Therefore, considering the problems associated with valid earning forecast and effective factors in this regard, attempts are made in the present study to investigate the effect of surplus free cash flow on earning forecast, and the role of corporate governance indicators in the negative effect of surplus cash flow on earnings forecasts, as well as The effect of corporate governance on reduction of surplus free cash flow and improved credibility of earning forecast in large and small companies.

Research hypothesis:

Drawing on the theoretical foundations of the study and previous domestic and foreign studies, especially the study of Jay et al. (…..), attempts are made in the present study to answer the following question: Do corporate governance indicators have a moderating effect on the negative correlation between the surplus cash flow and earnings forecast?

Therefore, three main hypotheses and three sub hypotheses are defined as follows:

Hypothesis 1: surplus free cash flow has a negative effect on the predictability of earnings.

Hypothesis 2: Corporate governance has a positive effect on the predictability of earnings.

Hypothesis 3: Corporate governance indicators have a moderating effect on the negative relationship between surplus cash flow and earnings predictability

Sub-hypothesis 1: The independence of the board of directors has a positive impact on the relationship between surplus free cash flow and earnings predictability.

Sub hypothesis 2: The board size affects the relationship between surplus free cash flow and earnings predictability.

Sub-hypothesis 3: Dichotomous duties of directors has a positive effect on the relationship between surplus free cash flow and earnings predictability.

Research methodology:

The present study is applied in terms of objectives, and descriptive-correlational in terms of nature and procedure. This study was conducted within a time interval ranging from… to….. Methods of data collection are divided into two groups: library –based data collection and field-study data collection. The statistical sample was also selected through systematic elimination approach. Therefore, the inclusion criteria included corporates that meet the following requirements:

2. Corporates listed in exchange market from … to …,

2. Corporates that did not change the fiscal year during the period of study.

3. Corporates with accessible required information.

4. Corporates that meet the end of their fiscal year at the end of Isfand (March).

The following regression models were used to test the research hypotheses respectively.

The following regression model was used to test the first hypothesis:

$$CFO_{t+1} = \beta_0 + \beta_1 EARN + \beta_2 EARN * SFCF + \beta_3 SIZE + \beta_4 DEBT + \beta_5 LOSS + \varepsilon$$

If the coefficient β2 is significant in the above model, then the first hypothesis is confirmed. T test is used to determine the significance of the β2 coefficient

The following model is used to test the second hypothesis:

$$CFO_{t+1} = \beta_0 + \beta_1 EARN + \beta_2 EARN * CG + \beta_3 SIZE + \beta_4 DEBT + \beta_5 LOSS + \varepsilon$$

If the coefficient β2 is significant in the above model, then the second hypothesis is confirmed. T test is used to determine the significance of the β2 coefficient

$$CFO_{t+1} = \beta_0 + \beta_1 EARN + \beta_2 EARN * SFCF + \beta_3 EARN * CG + \beta_4 EARN * SFCF * CG + \beta_5 SIZE + \beta_6 DEBT + \beta_7 LOSS + \varepsilon$$

If the coefficient β4 is statistically significant in the above model, then the third hypothesis is confirmed. T test is used to determine the significance of the β4 coefficient. βj, j = 0,1, ..., is evaluated in three models in order to test the

research hypotheses and in case the significance level of this coefficient is lower than 0.05, then it can be concluded that $\beta j \neq 0$ and both the independent and control variables affect the dependent variable.

Research model and its variables:

The dependent variable of this research is the future operating cash flow:

The following equation is used to measure future operating cash flow:

Future operating cash flow =

$$\frac{net\ operating\ cash\ flow\ of\ the\ next\ year}{book\ value\ of\ assets\ at\ the\ beginning\ of\ the\ fiscal\ year}$$

It is noteworthy that earnings predictability is the ability of current earnings to predict future cash flows, so this variable is a substitute for earning forecast. (Vulari and Jenkins 2006; Autowood et al., 2010; Ye et al., 2010).

Independent variables of this study include surplus free cash flow, net earning and corporate governance indices (including the independence of board members, board size, dichotomy of duty and institutional ownership) that are measured as follows:

Surplus free cash flow (SFCF): this is a virtual variable. In case FCF obtained from the following equation exceeds the variable median, it is considered to be equal to 1, otherwise it would be equal to 0. The SFCF of corporate I in year t is calculated as follows:

$$FCF_{it} = \frac{INC_{it} - TAX_{it} - INTEXP_{it} - OSID_{it}}{TA_{it-1}}$$

Different items in this equation are defined as follows:

INC_{it} is the operating earnings before amortization in corporate I during year t

TAX_{it} Denotes income tax for corporate I during year t

$INTEXP_{it}$ is the interest expense on short term and long term debts in corporate I during year t

$OSDIV_{it}$ The overall share dividend in corporate I during year t

TA_{it} Book value of the total assets of corporate I during year t

1-Earn: is the net interest of corporate I during year t divided by the total value of assets at the beginning of the fiscal year, which can be extracted from the list of earnings and losses

Corporate governance (CG): include 4 factors:

Board member independence (BDIND)

Board size (BDSIZE)

Dichotomy of tasks (CHIN): is a virtual variable that is equal to 1 if the chairman is no the CEO at the same time. Otherwise, the value of this variable would be equal to 0.

Institutional ownership: is equal to the percentage of a company's available stock owned by juridical persons. including insurance, pension and….

The control variable in this study are as follows:

DEBT: the total value of long term debts divided by book value of all the assets

Size: natural logarithm of total corporate assets during year t

LOSS: is a virtual variable that would be equal to 1 in case corporate t reports any loss during year t, otherwise its value would be equal to 0

Findings:

Table 1 shows the important features of Descriptive statistics of research variables. For example, the average value of loss variable is equal to 11%. This means that 11% of corporates in the study period face losses. Moreover, the minimum and maximum values of variable Cfot+1 (future cash flows) is equal to -. 712 and .998 respectively

Table 1: Descriptive statistics of research variables

variable	Number	mean	SD	min	max
Cfot+1	756	0.157	0.220	-0.712	0.998
Earn	756	-0.153	0.183	-1.268	0.282
CG	756	5.17	0.492	-1.162	3.539
Earns Fcf	756	-0.118	0.179	-1.268	0.141
Debt	756	0.615	0.225	0.012	2.077
Size	756	13.794	1.511	10.031	19.009
Loss	756	0.113	0.317	0	1

The results of F Lemer (Chow) and Hausman's test:

According to Table 2, as the significance level of the F Lemer test in the first and third models is less than 5%, the panel data versus consolidated data (money) will be accepted. Moreover, since the significance level of the Hausman test in the first –third models is less than 5%, the fixed effects of the Y-intercept versus the random effects will be accepted (Table 2).

Table 2: F lemer Test Results

model name	test statistic	significance level	result
model 1	1.48	0.001	panel
model 2	1.47	0.001	panel
model 3	1.46	0.002	panel

Table 4: Hausman Test Results

model name	test statistic	significance level	result
model 1	12.71	0.026	fixed effects
model 2	16.77	0.004	fixed effects
model 3	14.69	0.040	fixed effects

Hypotheses testing results:

According to Table 7, the significance level of earning variable is more than 5 percent. This does not have a significant effect on the predictability of earnings.

The coefficient of surplus free cash flow variable is -184 and its significance level is level less than 5%. Therefore, it can be argued that the surplus free cash flow has a significant negative impact on earning predictability and the

first hypothesis is confirmed. Of the control variables, only the loss variable has a direct and significant effect on earning predictability. .

The moderated coefficient of determination is 31%, which indicates that the independent and control variables in the model have been able to account for 31% of changes in the dependent variables. The Fisher statistic is 3.655 and its significance level is less than 5%. Therefore, it can be said that the fitted model is valid enough.

According to Table 4, the earnings variable has a significant negative effect on earning predictability. The corporate governance variable also has a direct and significant effect on the dependent variable, but since its significance level is less than 10%, it sould only be significant at the confidence level of 90%. Confidence level and due to the fact that its significance level exceeds 5%, nothing can be said about its significant effect on earning forecasting at the confidence level of 95%. Since the Control variables have a significance level of over 5%, nothing could be said about their significant impact on earnings forecast. Therefore, the second hypothesis is also confirmed at 90% confidence level, and it can be argued that corporate governance can increase earning predictability.

The moderated coefficient of determination in this model is 2%, which indicates that the independent and control variables in the model have been able to account for 2% of the variation in the dependent variable. The Wald statistic is 20.68 and its significance level is less than 5 percent. Therefore, it can be argued that the fitted model is valid enough.

The significance level of earning variable exceeds 5% therefore it has no significant effect on earnings forecast. Also, the surplus free cash flow has a significant negative effect on earnings forecasts. The corporate governance variable does not have a significant effect on earnings forecast. The interactive effect of surpluses cash flow and corporate governance (Earns Fcf Earn CG) has a negative coefficient of determination and its significance level is less than 5%, hence the third hypothesis is confirmed. Therefore, it can be argued that corporate governance can reduce the significance of the negative relationship between the surplus free cash flow and the earning forecast (since the surplus free cash flow coefficient has decreased from -.184 in the first model to -.394 in the third model). In other words, corporate governance has increased earning predictability.

Table 5: Final estimation of the first hypothesis model with the panel data and fixed effects of y-intercept

variable	coefficients	SD	statistic t	significance level
Earn	0.008	0.020	0.408	0.683
Earns Fcf	-0.184	0.038	-4.728	0.000
Size	0.002	0.002	0.891	0.372
Debt	0.021	0.015	1.365	0.172
Loss	0.031	0.014	2.261	0.024
y-intercept	0.085	0.040	2.116	0.034
moderated coefficient of determination	0.313%			
Fisher	3.655			
significance level	0.000			

Table 6: Final estimation of the second hypothesis model with panel data and fixed effects of the y-intercept

variable	coefficients	SD	statistic z	significance level
Earn	-0.151	0.040	-3.78	0.000
Earns CG	-0.125	0.073	1.69	0.091
Size	0.005	0.005	1.03	0.301
Debt	0.044	0.034	1.30	0.195
Loss	0.010	0.022	0.47	0.635
y-intercept	0.027	0.077	0.35	0.725
moderated coefficient of determination	0.025 %			
Wald	20.68			
significance level	0.000			

Table 6: Final estimation of the third hypothesis model with panel data and fixed effects of the y-intercept

variable	coefficients	SD	statistic t	significance level
Earn	- 0.069	0.411	- 0.168	0.866
Earns Fcf	- 0.334	0.062	- 5.370	0.000
Earn CG	0.082	0.595	0.138	0.890
Earn FcF Earn CG	- 0.394	0.110	- 3.564	0.000
size	0.001	0.003	0.625	0.531
Debt	0.021	0.018	1.210	0.226
loss	0.030	0.011	2.539	0.011
y-intercept	0.084	0.045	1.867	0.062
moderated coefficient of determination	0.328			
Fisher	3.802			
significance level	0.000			

Discussion and conclusion:

In the present study, attempts are made to discuss the effect of concepts and theoretical foundations of the surplus free cash flow and corporate governance indices on the earnings predictability. To this end, first, the concept of free cash flow, its importance and other related issues have been investigated, then definitions, frameworks and rules of Corporate Governance in Iran are introduced, and finally, concepts associated with earning prediction, including the concept of earning, as well as goals and benefits of earning forecasting are reviewed. A review of literature showed that The investors' lack of confidence in the accuracy of accounting figures that mainly arises from the financial scandals of some corporates around the world, has led the researchers to pay more attention to the quality of earnings. Earning forecast, (the extent to which investors can predict future earnings or surplus cash flow based on the current earning information) is one of the proxies of the earning quality. The earning data are of high quality when investors are able to analyze the current performance of a particular corporate and estimate its future prospects much better.

On the other hand, increased sophistication of economic activities and variety of decisions have made it possible for managers to manipulate balance sheet items to superficially improve their performance and receive rewards. Surplus free cash flow is one of the factors that can influence the opportunistic behaviors of managers. In this light, Easton et al., drew on the share of variations in the value of the investment, to analyze the observations derived from the earning variations based on the sources of value variation. These sources include cash flows to debt holders, equity holders, cash reserves and changes in asset values (i.e. return on investment), and it was finally shown that cash flows can be much more useful than capital return in describing earnings, but directors may resort to inappropriate measures such as creation of devalued investment that leads to an increase in agency costs, corporate devaluation, and the jeopardize position of board,

and the worst scenario is the case where directors Use earnings management tools to inflate the reported earnings and thereby disguise the damaging effects of devalued investments. In fact, this kind of inflated earning reported by directors may have an impact on predictability of potential cash flows based on earning. For example, Rehman and Muhad Saleh stated that one of the misleading results emerges when the stock market devalues the earnings of corporates with free cash flow agency problems. Because corporates with conflicts over free cash flow tend to manipulate and report incorrect earning data, that's why investors are less likely to rely on this information to evaluate corporates. Therefore, earning prediction is very difficult for corporates with high free cash flow agency problems. Therefore, finding a way to deal with agency problems and ensure the quality of financial reporting for having an accurate earning prediction despite is very important. Therefore, regulatory agencies in various countries of the world have taken different measures, including corporate governance reform. In other words, different countries have used various laws and regulations, including corporate governance laws, to improve the data disclosure quality, and since, the surplus free cash flow agency problems are moderated by an appropriate system of corporate governance, the governance mechanisms (i.e., independent board of directors, small boards, independent director, high institutional ownership and high director ownership) are expected to affect the impact of surplus free cash flow on earnings forecasts.

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